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EXAMINER	
SANTOS, PATRICK J D	

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/726,023	LABELLE, LILIAN	
	Examiner	Art Unit	
	Patrick J Santos	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 14-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. The first office action did not indicate foreign priority papers had been filed by Applicant. Examiner has verified receipt of foreign priority papers and has indicated as such on the PTOL-326.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3, and 14-20 are rejected under 35 U.S.C. 103(a) being unpatentable over U.S. Patent No. 5,893,095 issued to Jain et al. (hereafter Jain '095) in view of U.S. Patent No. 6,345,274 issued to Zhu et al. (hereafter Zhu '274).

Claim 1:

Regarding Claim 1, Jain '095 discloses a content based image query engine. Specifically, Jain '095 discloses: a method of seeking images, from an example image containing at least one region of interest (Jain '095: col. 4, lns. 21-28; col. 35, lns. 17-18 – note that a portion of an image reads on a region of interest), from amongst a plurality of images stored in a database, each of the stored images being associated with a data item of a first type, referred to as an index of the stored image, representing at least one characteristic of the visual content of the image (Jain '095: Abstract; col. 3, ln. 58 to col. 4, ln. 4), said method comprising the following steps:

- for each region of interest, receiving a data item of a second type, indicative of a type of taking into account of the content of said region of interest for the seeking of images (Jain '095: col. 8, lns. 6-15);
- calculating a data item of a third type, referred to as the index of the example image, representing at least one characteristic of the visual content of the example image, the method of calculating said data item of the third type depending on said data item of the second type (Jain '095: col. 8, lns. 17-20, note that a primitive may be a composite function);
- calculating a similarity between the example image and each of the images amongst at least one subset of the stored images, said similarity being calculated from said data item of the first type associated with the stored image and the data item of the third type associated with the example image (Jain '095: col. 8, lns. 20-35; col. 7, lns. 9-23); and
- supplying at least one image, referred to as the result image, in the database, said at least one result image being selected from amongst said stored images in the database according to its degree of similarity with said example image (Jain '095: col. 9, ln. 64 to col. 10. ln. 10).

However, Jain '095 does not specifically disclose:

- selecting an image research strategy according to said at least one data item of the second type; or
- that the calculation of a similarity is according to the selected image research strategy.

Zhu '274 discloses a means to determine a similarity measure in image retrieval.

Specifically, Zhu '274 discloses:

- selecting an image research strategy according to said at least one data item of the second type (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17 – note that similarity measures read on image research strategy, and that dependent on the type of indexing structure (e.g. bounding regions, color moments, etc.) the similarity measure is selected); or
- that the calculation of a similarity is according to the selected image research strategy (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17).

It would have been obvious to a person having ordinary skill in the art to apply the strategy selection means of Zhu '274 to the image retrieval of Jain '095. The motivation to combine is suggested by Zhu '274 which discloses: use of the strategy selection means of Zhu '274 provides the advantage of providing an automatic way to determine user preferences in an image retrieval system such as that of Jain '095 (Zhu '274: col. 3, lns. 30-33).

Claim 3:

Regarding Claim 3, Jain '095 and Zhu '274 in combination disclose all the limitations of Claim 1 (supra). Further note that Jain '095 and Zhu '274 in combination additionally disclose: wherein said data item of the first type, called index of the stored image, associated with each of said stored images, consists of a histogram, of colors relating to the global content of the image (Jain '095: col. 7, lns. 50-53).

Claim 14:

Regarding Claim 14, Jain '095 and Zhu '274 in combination disclose all the limitations of Claim 1 (supra). Further note that Jain '095 and Zhu '274 in combination additionally disclose: wherein the selected image research strategy uses a measurement of similarly selected from amongst a plurality of possible measurements based on said at least one data item of the

second type (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17 – note that similarity measures read on image research strategy, and that dependent on the type of indexing structure (e.g. bounding regions, color moments, etc.) the similarity measure is selected).

Claim 15:

Regarding Claim 15, Jain '095 and Zhu '274 in combination disclose all the limitations of Claims 1 and 14 (supra). Further note that Jain '095 and Zhu '274 in combination additionally disclose: further comprising a step of receiving a data item of a fourth type representing the location of at least one region of interest in the example image (Jain '095: col. 35, lns. 17-18).

Claim 16:

Regarding Claim 16, Jain '095 and Zhu '274 in combination disclose all the limitations of Claim 15 (supra). Further note that Jain '095 and Zhu '274 in combination additionally disclose: wherein said data item of the fourth type representing the location of at least one region of interest in the example image consists of a set of two-dimensional points indicative of the shape of said at least one region of interest and its location in the image plane of said example image (Jain '095: col. 35, lns. 17-18 – note that an image is two-dimensional and specifying a "portion of the image" as per Jain '095 includes indicating the shape and location of a region of interest).

Claim 17:

Regarding Claim 17, Jain '095 and Zhu '274 in combination disclose all the limitations of Claims 1 and 2 (supra). Further note that Jain '095 and Zhu '274 in combination additionally disclose: the device embodiment of said methods (Jain '095: col. 10, lns. 11-40).

Claim 18:

Examiner notes the means plus function language in Claim 18. By applying the three prong test as specified in MPEP 2181, Examiner interprets Claim 18 as language falling under 35 USC 112, sixth paragraph.

Regarding Claim 18, Jain '095 discloses a content based image query engine. Specifically, Jain '095 discloses a: device for seeking images, from an example image containing at least one region of interest (Jain '095: col. 4, lns. 21-28; col. 35, lns. 17-18 – note that a portion of an image reads on a region of interest), from amongst a plurality of images stored in a database, each of the stored images being associated with a data item of a first type, referred to as an index of the stored image, representing at least one characteristic of the visual content of the image (Jain '095: Abstract; col. 3, ln. 58 to col. 4, ln. 4), said device comprising:

- means for receiving, for each region of interest, a data item of a second type indicative of a type taking into account of the content of said region of interest for the seeking of images (Jain '095: col. 8, lns. 6-15);
- means for calculating a data item of a third type, referred to as the index of the example image, representing at least one characteristic of the visual content of the example image and depending on said data item of the second type (Jain '095: col. 8, lns. 17-20, note that a primitive may be a composite function);
- means for calculating a similarity, between the example image and each of the images amongst at least one subset of the stored images, based on said data item of the first type associated with the stored image and on the date item of the third type associated with the example image (Jain '095: col. 8, lns. 20-35; col. 7, lns. 9-23); and

- means for supplying at least one image, referred to as the result image, in the database, based on a selection from amongst said stored images in the database according to a degree of similarity of said result image with said example image (Jain '095: col. 9, ln. 64 to col. 10. ln. 10).

However, Jain '095 does not explicitly disclose:

- means for selecting an image research strategy according to said at least one data item of the second type;
- calculation of the similarity is according to the selected research strategy.

Zhu '274 discloses a means to determine a similarity measure in image retrieval. Specifically, Zhu '274 discloses:

- means for selecting an image research strategy according to said at least one data item of the second type (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17 – note that similarity measures read on image research strategy, and that dependent on the type of indexing structure (e.g. bounding regions, color moments, etc.) the similarity measure is selected); or
- calculation of the similarity is according to the selected research strategy (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17).

It would have been obvious to a person having ordinary skill in the art to apply the strategy selection means of Zhu '274 to the image retrieval of Jain '095. The motivation to combine is on the same basis as Claim 1 (supra).

Claim 19:

Regarding Claim 19, Jain '095 and Zhu '274 in combination disclose all the limitations of Claims 1 and 2 (supra). Further note that Jain '095 and Zhu '274 in combination additionally disclose: a computer comprising means embodiment of said methods (Jain '095: col. 10, lns. 11-40).

Claim 20:

Regarding Claim 20, Jain '095 and Zhu '274 in combination disclose all the limitations of Claims 17 and 18 (supra). Further note that Jain '095 and Zhu '274 in combination additionally disclose: a computer comprising an image search device according to Claims 17 and 18 (Jain '095: col. 10, lns. 11-40).

4. Claims 1, 3, and 14-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,373,979 issued to Wang (hereafter Wang '979) and Zhu '274.

Claim 1:

Regarding Claim 1, Wang '979 discloses a content based image query engine. Specifically, Wang '979 discloses: a method of seeking images, from an example image containing at least one region of interest (Wang '979: col. 4, lns. 27-32 – note that attributes based on spatial characteristics read on a region of interest), from amongst a plurality of images stored in a database, each of the stored images being associated with a data item of a first type, referred to as an index of the stored image, representing at least one characteristic of the visual content of the image (Wang '979: Abstract, Fig. 5, Fig. 8A, col. 7, lns. 10-12), said method comprising the following steps:

- for each region of interest, receiving a data item of a second type, indicative of a type of taking into account of the content of said region of interest for the seeking of images (Wang '979: col. 4, lns. 44-46);
- calculating a data item of a third type, referred to as the index of the example image, representing at least one characteristic of the visual content of the example image, the method of calculating said data item of the third type depending on said data item of the second type (Wang '979: col. 5, lns. 6-20, note the weighted similarity function);
- calculating a similarity, between the example image and each of the images amongst at least one subset of the stored images, said similarity being calculated from said data item of the first type associated with the stored image and the data item of the third type associated with the example image (Wang '979: col. 5, lns. 22-30); and
- supplying at least one image, referred to as the result image, in the database, said at least one result image being selected from amongst said stored images in the database according to its degree of similarity with said example image (Wang '979: Fig. 8A, col. 7, lns. 21-23).

However, Wang '979 does not specifically disclose:

- selecting an image research strategy according to said at least one data item of the second type; or
- that the calculation of a similarity is according to the selected image research strategy.

Zhu '274 discloses a means to determine a similarity measure in image retrieval.

Specifically, Zhu '274 discloses:

- selecting an image research strategy according to said at least one data item of the second type (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17 – note that similarity measures read on image research strategy, and that dependent on the type of indexing structure (e.g. bounding regions, color moments, etc.) the similarity measure is selected); or
- that the calculation of a similarity is according to the selected image research strategy (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17).

It would have been obvious to a person having ordinary skill in the art to apply the strategy selection means of Zhu '274 to the image retrieval of Wang '979. The motivation to combine is suggested by Zhu '274 which discloses: use of the strategy selection means of Zhu '274 provides the advantage of providing an automatic way to determine user preferences in an image retrieval system such as that of Wang '979 (Zhu '274: col. 3, lns. 30-33).

Claim 3:

Regarding Claim 3, Wang '979 and Zhu '274 in combination disclose all the limitations of Claim 1 (supra). Further note that Wang '979 and Zhu '274 in combination additionally disclose: wherein said data item of the first type, called index of the stored image, associated with each of said stored images, consists of a histogram, of colors relating to the global content of the image (Wang '979: col. 4, lns. 44-45).

Claim 14:

Regarding Claim 14, Wang '979 and Zhu '274 in combination disclose all the limitations of Claim 1 (supra). Further note that Wang '979 and Zhu '274 in combination additionally disclose: wherein the selected image research strategy uses a measurement of similarly selected from amongst a plurality of possible measurements based on said at least one data item of the

second type (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17 – note that similarity measures read on image research strategy, and that dependent on the type of indexing structure (e.g. bounding regions, color moments, etc.) the similarity measure is selected).

Claim 15:

Regarding Claim 15, Wang '979 and Zhu '274 in combination disclose all the limitations of Claims 1 and 14 (supra). Further note that Wang '979 and Zhu '274 in combination additionally disclose: further comprising a step of receiving a data item of a fourth type representing the location of at least one region of interest in the example image (Wang '979: col. 4, lns. 27-36 - note that an image is two-dimensional and specifying the "attributes of the segments" as per Wang '979 reads on the shape and location of a region of interest).

Claim 16:

Regarding Claim 16, Wang '979 and Zhu '274 in combination disclose all the limitations of Claim 15 (supra). Further note that Wang '979 and Zhu '274 in combination additionally disclose: wherein said data item of the fourth type representing the location of at least one region of interest in the example image consists of a set of two-dimensional points indicative of the shape of said at least one region of interest and its location in the image plane of said example image (Wang '979: col. 4, lns. 27-36 - note that an image is two-dimensional and specifying the "attributes of the segments" as per Wang '979 reads on the shape and location of a region of interest).

Claim 17:

Regarding Claim 17, Wang '979 and Zhu '274 in combination disclose all the limitations of Claims 1 and 2 (supra). Further note that Wang '979 and Zhu '274 in combination additionally disclose: the device embodiment of said methods (Wang '979: col. 9, lns. 4-10).

Claim 18:

Examiner notes the means plus function language in Claim 18. By applying the three prong test as specified in MPEP 2181, Examiner interprets Claim 18 as language falling under 35 USC 112, sixth paragraph.

Regarding Claim 18, Wang '979 discloses a content based image query engine. Specifically, Wang '979 discloses a: device for seeking images, from an example image containing at least one region of interest (Wang '979: col. 4, lns. 27-32 – note that attributes based on spatial characteristics read on a region of interest), from amongst a plurality of images stored in a database, each of the stored images being associated with a data item of a first type, referred to as an index of the stored image, representing at least one characteristic of the visual content of the image (Wang '979: Abstract, Fig. 5, Fig. 8A, col. 7, lns. 10-12), said device comprising:

- means for receiving, for each region of interest, a data item of a second type indicative of a type taking into account of the content of said region of interest for the seeking of images (Wang '979: col. 4, lns. 44-46);
- means for calculating a data item of a third type, referred to as the index of the example image, representing at least one characteristic of the visual content of the example image and depending on said data item of the second type (Wang '979: col. 5, lns. 6-20, note the weighted similarity function);

- means for calculating a similarity, between the example image and each of the images amongst at least one subset of the stored images, based on said data item of the first type associated with the stored image and on the date item of the third type associated with the example image (Wang '979: col. 5, lns. 22-30); and
- means for supplying at least one image, referred to as the result image, in the database, based on a selection from amongst said stored images in the database according to a degree of similarity of said result image with said example image (Wang '979: Fig. 8A, col. 7, lns. 21-23).

However, Wang '979 does not explicitly disclose:

- means for selecting an image research strategy according to said at least one data item of the second type;
- calculation of the similarity is according to the selected research strategy.

Zhu '274 discloses a means to determine a similarity measure in image retrieval.

Specifically, Zhu '274 discloses:

- means for selecting an image research strategy according to said at least one data item of the second type (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17 – note that similarity measures read on image research strategy, and that dependent on the type of indexing structure (e.g. bounding regions, color moments, etc.) the similarity measure is selected); or
- calculation of the similarity is according to the selected research strategy (Zhu '274: col. 7, lns. 9-12; col. 8, lns. 15-17).

It would have been obvious to a person having ordinary skill in the art to apply the strategy selection means of Zhu '274 to the image retrieval of Wang '979. The motivation to combine is on the same basis as Claim 1 (supra).

Claim 19:

Regarding Claim 19, Wang '979 and Zhu '274 in combination disclose all the limitations of Claims 1 and 2 (supra). Further note that Wang '979 and Zhu '274 in combination additionally disclose: a computer comprising means embodiment of said methods (Wang '979: col. 9, lns. 4-10).

Claim 20:

Regarding Claim 20, Wang '979 and Zhu '274 in combination disclose all the limitations of Claims 17 and 18 (supra). Further note that Wang '979 and Zhu '274 in combination additionally disclose: a computer comprising an image search device according to Claims 17 and 18 (Wang '979: col. 9, lns. 4-10).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang '979 and Zhu '274 in view of U.S. Patent No. 6,230,154 issued to Raz et al. (hereafter Raz '154).

Claim 2:

Regarding Claim 2, Wang '979 and Zhu '274 in combination disclose all the limitations of Claim 1 (supra). Further note that Wang '979 and Zhu '274 additionally disclose: wherein said data item of the second type, associated with a region of interest, is a scalar data item which can take all the values lying between a predefined lower value V_{min}, and a predefined higher value V_{max}, (Wang '979: col. 5, lns. 22-39) and wherein:

- if said data item of the second type, is equal to the predefined lower value V_{min}, the content of the images sought must not be similar to the content of the corresponding region of interest (Wang '979: col. 5, lns. 29-33); and
- if said data item of the second type, is equal to the predefined higher value V_{max}, the content of the images sought must be similar to the content of the corresponding region of interest (Wang '979: col. 5, lns. 27-31).

However, Wang '979 and Zhu '274 in combination do not explicitly disclose:

- if said data item of the second type, lies strictly between the lower predefined value V_{min} and the higher predefined value V_{max}, the content of the images sought must be more or less similar to that of the corresponding region of interest depending on whether the value of said data item of the second type, is close to V_{max} or is close to V_{min}, the overall content of the example image also having to be taken into consideration.

  Raz '154 discloses a hyperbox that defines whether a retrieved item is similar.

Specifically, Raz '154 discloses:

- if said data item of the second type, lies strictly between the lower predefined value V_{min} and the higher predefined value V_{max}, the content of the images sought must be more or less similar to that of the corresponding region of interest depending on whether the value of said data item of the second type, is close to V_{max} or is close to V_{min}, the overall content of the example image also having to be taken into consideration.
- Raz '154 discloses a hyperbox that defines whether a retrieved item is similar (Raz '154: lns. 14-27).

It would have been obvious to a person having ordinary skill in the art to augment the similarity criteria of Wang '979 and Zhu '274 with the hyperbox of Raz '154. The motivation to accomplish said augmentation is suggested by Raz '154 which discloses that applying the hyperbox of Raz '154 provides a particularly advantageous way to view and conceptualize similarity relationships between database items (Raz '154: col. 3, lns. 23-38).

6. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang '979, Zhu '274, and Raz '154, in view of Jain '095.

Claim 4:

Regarding Claim 4, Wang '979, Zhu '274, and Raz '154 in combination disclose all the limitations of Claim 3 (supra). Further note that Wang '979, Zhu '274, and Raz '154 in combination additionally disclose that a condition can be set for:

- if all said data items of the second type are equal to said lower predefined value V_{min}, or if all said data of the third type are equal to said higher predefined value V_{max}; or
- if each of said data of the second type is equal to V_{min} or equal to V_{max} (Raz '154: lns. 14-27 – note the hyperbox of Raz '154 reads on this range setting)

However, Wang '979, Zhu '274, and Raz '154 in combination do not explicitly disclose that the action taken on the above condition is:

- said step of calculating a data item of a third type, called index of the example image, includes a step of calculating a vector, each component of which consists of the histogram of colors representing the visual content of one of said regions of interest, said vector constituting the index of said example image.

Jain '095 discloses:

- said step of calculating a data item of a third type, called index of the example image, includes a step of calculating a vector, each component of which consists of the histogram of colors representing the visual content of one of said regions of interest, said vector constituting the index of said example image (Jain '095: col. 8, lns. 32-34 – note that the composite metric of Jain '095 reads on the index of Applicant).

It would have been obvious to a person having ordinary skill in the art to set the composite metric of Jain '095 for the condition of Wang '979, Zhu '274, and Raz '154 in combination. The motivation to accomplish said setting is suggested by Jain '095 which discloses the necessity of combining into a composite metric different distance metric components of multiple primitives (i.e. computed statistical features of an image) (Jain '095: col. 8, lns. 29-34).

Claim 5:

Regarding Claim 5, Wang '979, Zhu '274, Raz '154, and Jain '095 in combination disclose all the limitations of Claim 4 (supra). Further note that Wang '979, Zhu '274, Raz '154, and Jain '095 in combination additionally disclose: wherein if all said data of the second type are strictly between said lower predefined value V_{min} and said higher predefined value V_{max}, then said step of calculating a data item of a third type, called index of the example image (Raz '154: lns. 14-27 and Jain '095: col. 8, lns. 29-34), includes the following steps:

- calculating a matrix with M rows and M columns, where M is a integer number designating the number of colors available, each element of whose diagonal corresponds to one of the M colors available, each of the elements of the diagonal having a value

which is calculated as a function of the dominant character of the color associated with said element in said at least one region of interest associated with said example image, and of said data item of the second type associated with said at least one region of interest (Wang '979: col. 4, ln. 62 to col. 5, ln. 20 – note the "weighting matrix" of Wang '979);

- calculating the histogram of colors representing the overall visual content of said example image (Wang '979: col. 4, ln. 62 to col. 5, ln. 20 – note the multiplication of the "weighting matrix" with the "histograms representing the color characteristics" of Wang '979); and
- defining said index of the example image as being the result of the product of said matrix and said histogram of colors representing the overall visual content of said example image (Wang '979: col. 4, ln. 62 to col. 5, ln. 20 – note the use of the multiplication of the "weighting matrix" with the "histograms representing the color characteristics" for a "weighted similarity function" of Wang '979).

Claim 6:

Regarding Claim 6, Wang '979, Zhu '274, Raz '154, and Jain '095 in combination disclose all the limitations of Claim 5 (supra). Further note that Wang '979, Zhu '274, Raz '154, and Jain '095 in combination additionally disclose: when said data of the second type are not all equal to said lower predefined value V_{min}, and are also not all equal to said higher predefined value V_{max}, and are also not each equal either to V_{min} or to V_{max}, and also not all strictly between V_{min} and V_{max} (Raz '154: lns. 14-27 – note the hyperbox of Raz '154), said index of the example image consists of the result of the product of said matrix and said histogram of colors representing the overall visual content of said example image, and of said vector (Wang '979:

col. 4, ln. 62 to col. 5, ln. 20 – see discusion in Claim 5 (supra)), each component of which consists of the histogram of colors representing the visual content of one of said regions of interest (Wang '979: col. 5, lns. 4-5; col. 4, lns. 28-32 – note the "segments" of Wang '979 read on regions of interest).

Claims 7-9:

Regarding Claims 7-9, Wang '979, Zhu '274, Raz '154, and Jain '095 in combination disclose all the limitations of Claim 6 (supra). Further note that Wang '979, Zhu '274, Raz '154, and Jain '095 in combination additionally disclose:

- (Claim 7) said step of calculating a similarity between the example image and each of the images amongst at least one subset of the stored images, includes the step of calculating a similarity, denoted SIM_1, obtained by means of the following formula:

$$SIM_1(D) = Max\ [\ H_M(D)\ \cap H_M\ (ROI_r^{S0})\ ]$$

in which $H_M(D)$ designates a histogram of colors calculated for the stored image under consideration; ROI_r^{S0} designates any region of interest in the example image for which the associated data item of the second type, is equal to V_{min}; $H_M\ (ROI_r^{S0})$ designates a histogram of colors calculated for this region of interest; the operator $\cap$ designates the intersection operation between histograms; and the function *Max* takes the largest value obtained by these intersections (Wang '979: col. 7, ln. 24 to col. 8, ln. 18).

- (Claim 8) said step of calculating a similarity between the example image and each of the images amongst at least one subset of the stored images, includes the step of calculating a similarity, denoted SIM_2, obtained by means of the following formula:

$$SIM_2(D) = Max\ [\ H_M(D) \cap H_M\ (ROI_r^{S1})\ ]$$

in which $H_M(D)$ designates a histogram of colors calculated for the stored image under consideration; ROI_r^{S0} designates any region of interest in the example image for which the associated data item of the second type, is equal to V_{max}; $H_M\ (ROI_r^{S1})$ designates a histogram of colors calculated for this region of interest; the operator $\cap$ designates the intersection operation between histograms; and the function *Max* takes the largest value obtained by these intersections (Wang '979: col. 7, ln. 24 to col. 8, ln. 18).

- (Claim 9) said step of calculating a similarity between the example image and each of the images amongst at least one subset of the stored images includes the step of calculating a similarity, denoted SIM_3, obtained by means of the following formula:

$$SIM_3(D) = H_M(D) \cap X(Q) \quad with\ X(Q) = W \bullet H_M(Q)$$

in which $H_M(D)$ designates a histogram of colors calculated for the stored image under consideration; W designates said matrix; $H_M(Q)$ is a histogram of colors representing the global visual content of said example image; and the operator n designates the intersection operation between histograms (Wang '979: col. 7, ln. 24 to col. 8, ln. 18).

Note that the combination of Wang '979, Zhu '274, Raz '154, and Jain '095 provide for use of appropriate similarity function as required by the user (Wang '979: col. 7, ln. 32 and Jain '095: col. 8, lns. 20-55) and moreover provide for the elements to calculate the similarity function and conditions for the similarity functions of Claims 7-9. A person having ordinary skill in the art, faced with the problem of creating an appropriate similarity function as applicable per Claims 7-

9 would reasonably expected to infer the similarity functions as per Claims 7-9 (see MPEP 2144.01).

Response to Arguments

8. Applicant's arguments filed August 26, 2004 have been fully considered but they are not persuasive. Applicant attempts to distinguish from the prior art presented in the first office action by adding the additional limitation, "selecting an image research strategy according to said at least one data item of the second type" (Amendment: p. 2, lns. 19-20; p. 12, lns. 19-21). Addition of the Zhu '274 reference provides this newly added limitation as well as motivation to combine with the prior art as presented in the first office action (supra).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J Santos whose telephone number is 571-272-4028. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J.D. Santos
January 20, 2005

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